

the history of SA ranger master

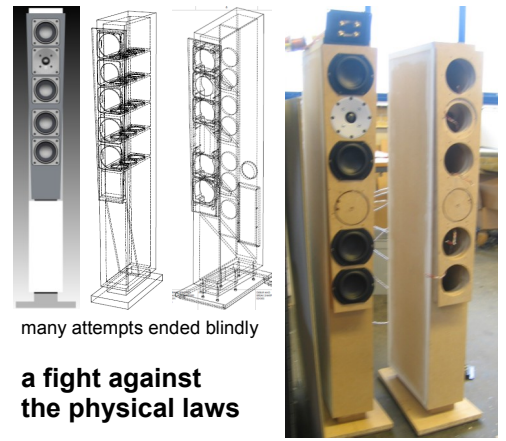
by Ole Witthøft

Exclamation mark is the title of the very first primitive sketch of SA ranger master. New technologies were supposed to show the way and the project was given the internal name SA4050.



SA explorer paved the way for SA ranger ... which paved the way for SA ranger master

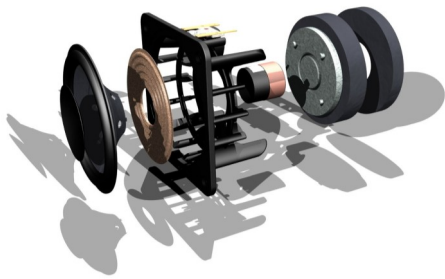
The background for SA ranger was the top speaker SA explorer. The new XS technology could provide an excellent standard of reproduction of high frequencies, while the XL technology, made a milestone for the performance in small woofers. Project SA4050 had the ambitious goal to create the almost the same sound as SA explorer from a loudspeaker at only half the size.



many attempts ended blindly

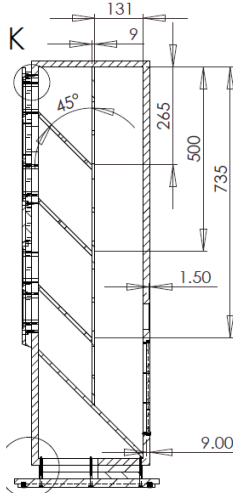
a fight against the physical laws

Here you see one of the early SA4050 prototypes. A prototype in trouble because the small woofers can move so much air that there was compression of the air inside the loudspeaker. We had to re-design the internal ventilation inside the cabinet. Note the blocked hole. Simulation of loudspeaker acoustics showed that the woofer no. 3 (top) was placed inappropriately. The simulation also showed that it had to be moved below woofer no. 4



an almost unbelievable performance

SA passed a milestone with the development of the W1104XL. The moving system can move 3-5 times as much air as any other woofer of the same size. The loudspeaker chassis is cast in aluminum and the design is almost completely open, so the air at the back of the membrane can pass easily into the cabinet.



cabinet interior. Development of acoustics takes shape

The special front panel is not just design. It has embedded "vents", directing the air between the woofers and cabinet. The inside of the cabinet is divided into six chambers of irregular dimensions, to optimize the acoustics, and thus the sound.



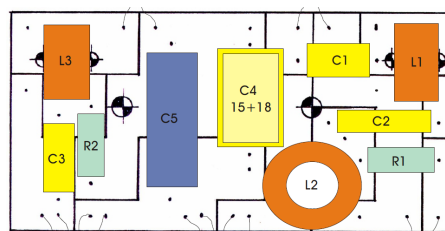
hear the nuances

The cornerstone of the tweeter T2506XS2 is the super light textile membrane, made of a material from a Japanese textile supplier. The membrane weighs just 80 mg and is possibly the lightest ever made. Another special feature is the curved faceplate, forming a wave guide that will effectively lead the sound away from the cabinet edges. It can be difficult to see, but the wave guide "hang" a little into the membrane. It is a small piece acoustic design that distributes the highest tones around in your living room.



how it got its name

SA ranger got its name on a normal day. Brian Larsen, who for years has been responsible for production of SA's top speakers, was in SA's kitchen. Here he looked at the large paper where all sorts of new names were written. None of the suggestions were really good. "How about calling the new speaker SA ranger?", Brian asked. His idea was decided in an instant and SA4050 project had now been given a good and personal name.



a crossover using only 10 components. Only 4 of them are in the signal path.

the way to the master

SA ranger is so well-built that it required special measuring equipment, a custom-built test room, two teams acoustic engineers, innovation and lots of listening tests for the SA ranger master to be realized. First, we succeeded to optimize the acoustics inside the enclosure. This opened the possibility of reducing the number of components in the crossover, which gave reason to implement one of the world's best cables for the tweeter. The goal was to create a speaker could surpass its role model.

the new standard

Five years after the first sketch was drawn, System Audio A/S present SA ranger master

