

## **The Subharchord Story**

### **Abstract of the ppt presentation in Trondheim, October 2011**

The history of the electro acoustical music and music instruments did begin in St. Petersburg with the invention of Theremin 1920 – after diverse pre-inventions. His instrument „Thermenvox“ can be handled to-day only by a few artists, and it needed a long time up to 2005 when a printed “Theremin School” was published by *Carolina Eyck*.

Much further international developments followed, the most well-known was the „Trautonium“ with his virtuous player *Oskar Sala*. This instrument inspired the author to the „Subharchord“, a Hybrid-Synthesizer (electronic sound and noise generator), which was developed in 1959 – 1966 in the former RFZ (Research Centre of Broadcasting and TV, German Post, Berlin East), especially for the application in studios of electro acoustical music as well as at Broadcasting, Film and TV.

With the „Subharchord“ could be generated beside a melody voice – derived by means of subtractive sound formation from oscillations with harmonics of high order and sounds by variable formant filters feeded with saw tooth and meander oscillations formats – most at all up to four subharmonic sounds which can be summarized to a multi voice mixture. The subharmonic frequencies can be combined in various manners in the dividing ratios  $\frac{1}{2}$  up to  $\frac{1}{29}$  and allow multifold sound structures.

They inspired to the protected trade mark „Subharchord“.

In our own experimental studio in Berlin-Adlershof in the years 1960 through 1970 more than 20 composers realized numerous works and sound illustrations for Moving Pictures, Broadcasting and TV, up to the time when the special music political situation in the former GDR did not allow to continue the development.

We had produced beside the prototype (saved by the composer Georg Katzer and installed in good standing in the EM Studio of the Academy of Art) six series instruments. Some could be found and restored. These are existing now in the Museums of Technology in Berlin and in Vienna. One instrument ordered by NRK in Oslo is exhibited in the Museum of Trondheim. It also should be restored by our special mechanic, so that Norwegian composer can work again with that instrument.