



Success Story Power Supplies · Displays · Touchscreens · Connection Technology  
**Redesign for mental trainer:  
Intuitive operation for cognitive training tool**

Many roads lead to successful learning. Ultrasound is the functional principle of the mental trainer from Kosys. In order to increase concentration and learn languages, this handy device transmits the ultrasound, which cannot be detected by the human ear, directly onto the body. The contemporary housing design of the manufacturer's learning tool, including touch display, was implemented by Elektrosil.

► **The challenge**

The customer wanted a slimline, compact look similar to that of the latest smartphones for its mental trainer with ultrasound function. The device should be easy to operate, and have a touchscreen as a further development of the preceding version.

► **The solution**

Elektrosil completely revamped the design of the device and supported its customer who was going into somewhat unfamiliar territory with many technical manufacturing aspects of the project with some sound development advice.

The engineers chose a display model with a high brightness level and an advantageous reading angle. They adapted a suitable projected-capacitive touchscreen to the small display, added a chemically anti-glare protective screen and incorporated the touch driver in the Linux software environment. They safeguarded

the optimum surface function of the sensitive technology – e.g. in the event of interference radiation from the display – in cooperation with the manufacturer by means of software modifications.

Finally, the engineering team developed a device housing that was optimised from the surface design to the impact stability together with a designer. The power consumption of the touchscreen was adapted using a sleep mode feature.

Other components included a customer-specific silicone cable with piezo sensors for transmitting the ultrasound, and a power supply with embossed logo. The PCB for generating the ultrasound and the programming software of the mental trainer were manufactured externally.

**Project information**

- Client: Kosys group of companies, represented by Kosys Vertrieb GmbH
- Industry: Point of Information
- Project size: Started at beginning of 2013, 1,000 pieces

**Elektrosil's services**

- Application advice, development supervision, design-in support
- Quality Assurance
- Engineering and production
- Completely customised applications



“Efficient learning with ultrasound – we wanted good usability with a contemporary design for our mental trainer. That’s when I called Elektrosil.”

### ► Advantages and benefits

Elektrosil made extremely efficient use of the restricted manufacturing options available with a small quantity, and came up with a high-quality design. Since all components of the device are supplied in a kit, the logistical effort was also minimised for the client. Thanks to these effects, Kosys now has one of the first mental trainers to be available on the market with an intuitively operated touch display.

In this way, the powerful interdisciplinarity and the engineering know-how of Elektrosil during the redesign of the mental trainer resulted in a high-quality solution that appeals to end customers and positions Kosys as an innovation driver.

Are you looking for a precisely tailored solution for your system and a competent partner? Just give us a call.

### + Elektrosil’s strengths

During development, the Elektrosil team combined its expertise in the areas of display & touch, cable assemblies and construction in an optimum way. For cost-effective component manufacturing, the company was able to fall back on the established partner network in best cost countries. Assembly and testing took place under clean room conditions in Germany, including the Elektrosil site in Wernberg.



Kosys Mental Trainer

