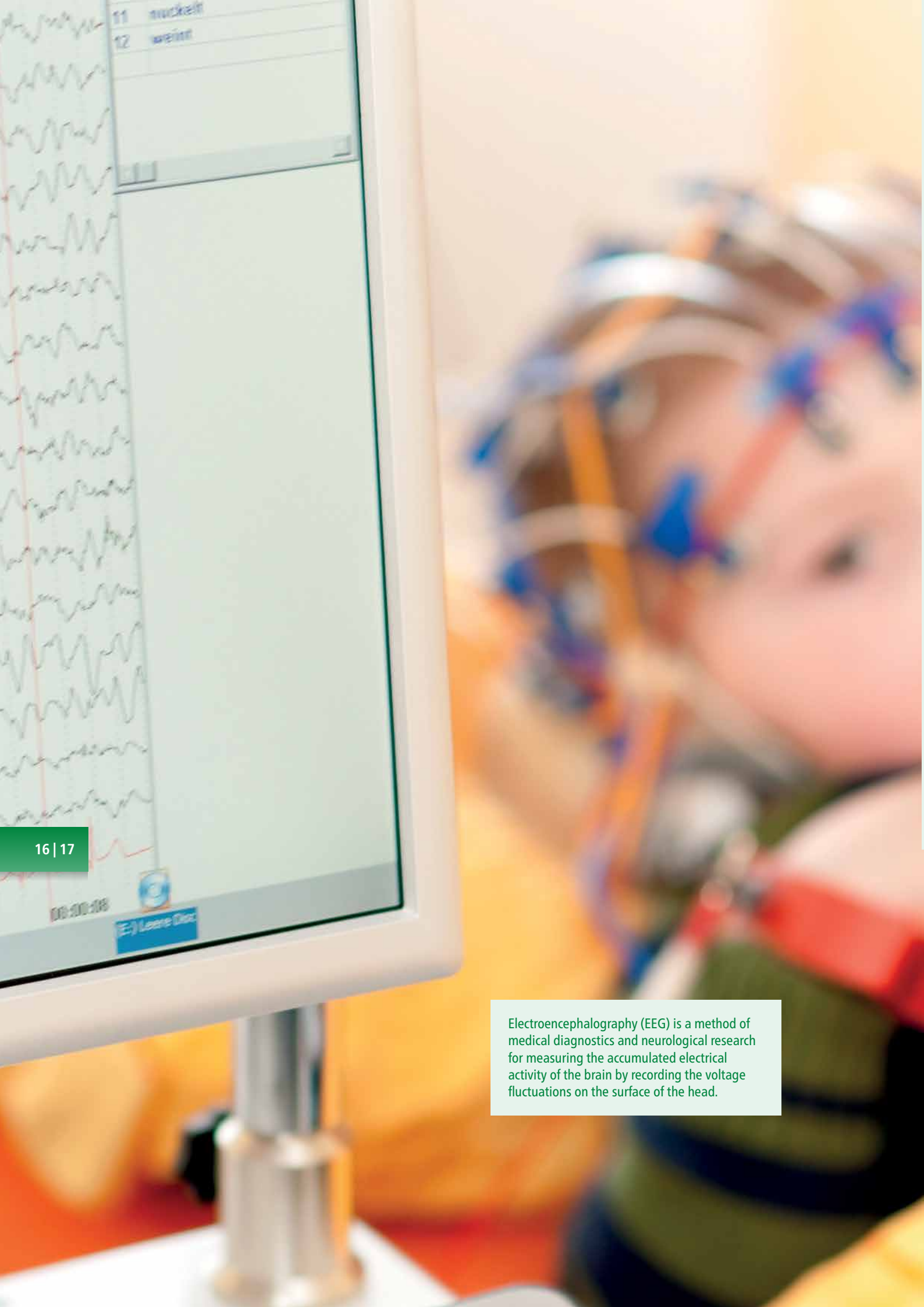
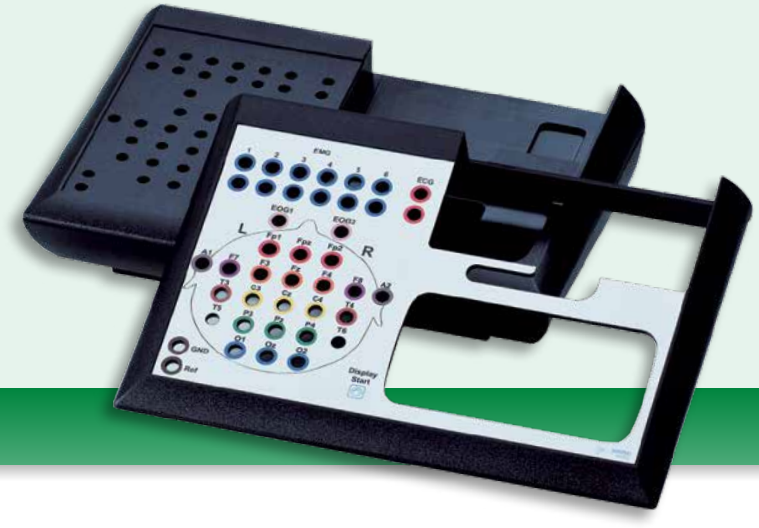


Electroencephalography (EEG) is a method of medical diagnostics and neurological research for measuring the accumulated electrical activity of the brain by recording the voltage fluctuations on the surface of the head.

"STATIONARY SYSTEM FOR LONG-TERM EEG RECORDINGS."

SOMNOMEDICS, AM SONNENSTUHL 63, 97263 RANDERSACKER, GERMANY

Packing the sensitive electronics of medical products individually and well is an enormous challenge. The company SOMNOmedics, producer of EEG systems, and OKW Gehäusesysteme have together developed and produced a plastic enclosure with many slots, a recorder and a touch screen.



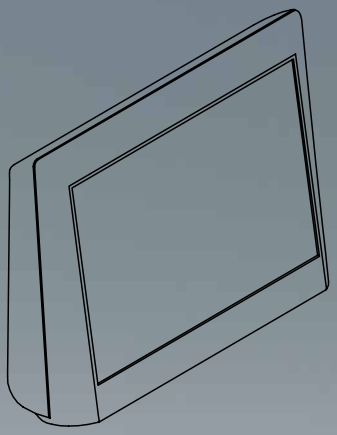
CUSTOMER APPLICATION

The demand for innovative medical instruments is rising constantly. Particularly when it is a question of state-of-the-art multifunctional devices, flexible solutions are called for. Nowadays many different requirements have to be met, not only by the electronics but also by a suitable enclosure.

A stationary EEG system must offer sufficient room and above all a clearly arranged space so that there are enough slots for electrodes. It should also be possible to implement various possible adaptations, and easy handling should be guaranteed. To avoid an annoying clutter of cables, wireless transmission of the measured data would also be advantageous. Together with the enclosure specialist OKW Gehäusesysteme, the company SOMNOmedics has developed a suitable product that meets all of these requirements and is already in use Europe-wide. SOMNOmedics is a company that operates at international level, offering powerful and innovative solutions for out-patient and in-patient sleep diagnostics as well as diagnostic equipment for neurology and cardiology. The devices are currently the smallest on the market and can be flexibly used as screeners or as complete PSG systems with extended EEG recording. Specially for neurological applications, SOMNOmedics has mobile systems for long-term electroencephalography (EEG) recordings in its product range. In this area, the range of products has been extended by a new, stationary EEG system.

The stationary EEG system by SOMNOmedics comprises a modified enclosure, the so-called stationary headbox, which forms the basis for an EEG amplifier. In the upper area, there is a holder in which the recorder from the SOMNOscreen plus range is integrated. The device is only functional when the two components are combined. A touch screen which receives the measured signals (EEG, ECG, EMG, oxygen saturation etc.) via

COMTEC – Modern, flat styling in 7 sizes and 2 colours. Ergonomic keypad enclosures with operating face inclined at 10°, a real asset when operating and reading.



The stationary headbox also has further connections on the rear interface surface.

Bluetooth and displays them in real time is also integrated. This makes it quick and easy to check whether all sensors have been correctly attached to the patient. On the front there are clearly arranged slots which allow the user to insert the EEG electrodes during a routine stationary examination, thus saving time. The stationary headbox also has further connections on the rear interface surface. Thanks to the shape of the enclosure, the device is easy to handle for both the doctor and the patient, and is reliable in everyday use. It can be used as a mobile version or as a desktop model. However, mounting on a standard DIN-rail by means of an adapter is no problem either. It is thus ideally equipped for everyday clinical use. Several units of the stationary headbox, including the recorder, are already in use Europe-wide.

COMTEC 290 desk enclosure series

For the development of the stationary headbox, SOMNOmedics decided in favour of the standard OKW COMTEC 290 enclosure in black (RAL 9005). But why this particular version? The ABS (UL 94 HB) enclosure (protection class IP 40) with the dimensions 290 x 200 x 75.5 mm (W x D x H) is particularly suitable for the safe installation of the necessary electronics thanks to its large volume. However, not only sufficient space in the interior was needed, but also enough surface area for slots for electrodes. The corresponding SOMNOscreen plus recorder as well as a touch screen also had to be installed in the enclosure. Thanks to the large operating area on the front of the COMTEC, all of these

SOMNOscreen plus – the smallest PSG system, with up to 33 channels. Wireless thanks to integrated radio transmitter, and upgradable any time.

Clearly arranged slots which allow the user to insert the EEG electrodes during a routine stationary examination, thus saving time.

requirements were no problem, and by means of numerous cutouts, all electrode slots were installed. Now all that was needed was an elegant solution for installing the recorder and the touch screen. Here, the available volume paid off twice over: beside the installation of the electronics, there was also enough room for the holder. For this particular solution, two panels were made for inserting the components, and these were then fitted in the interior. In addition to the wireless data transfer to the PC, optimum use was made of the large installation volume, and an annoying clutter of cables was also avoided. The recessed operating area offers ideal protection for the decor foil used, and the 10° inclination is practical for reading off the data. The modern and attractively flat enclosure design gives a gently feeling and underlines the ease of operation of the product. The interface surface on the rear of the top part was used for further connections. In addition, self-adhesive rubber feet ensure stable positioning for desk-top applications.

For modifications such as milling, painting, printing, EMC coating and much more, OKW Gehäusesysteme has its own in-house Service Centre, and can process and finish the enclosures directly on site. Besides the standard range, OKW can also produce customer-specific enclosure solutions, even going as far as serial production.

SOMNO medics

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