When EMC is of vital importance

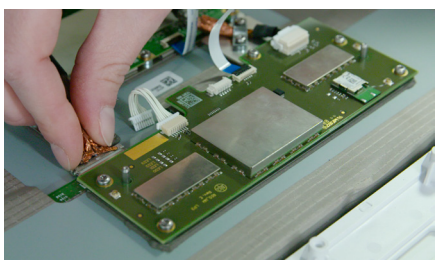
Electromagnetic compatibility (EMC) is not only mandatory in medical technology. If wireless communication between medical applications gets disrupted, it can have serious consequences for the patient. SCHURTER works together with developers in the medical industry to develop applications that comply with the strictest EMC standards.

Safe medical applications thanks to SCHURTER expertise

For patients with an implanted device, such as a pacemaker, communication between the device and a control unit takes place wirelessly via a radio signal. This signal has a specific frequency, so no radiation may be emitted from the electronics in applications used in that frequency range. EMC therefore plays a crucial role in the development of these applications.

Touch controller

For the design of the touch controller, use is made of a PCB with several copper layers. The outer layers then act as a shield so that signals in the inner layer cannot cause any emission. Filter components are placed at the cable connections that do have contact with the outside world and at the sensor connection, so that interference from the chip is stopped. Linear regulators are used for the power supply instead of switched ones, because they also produce interference.



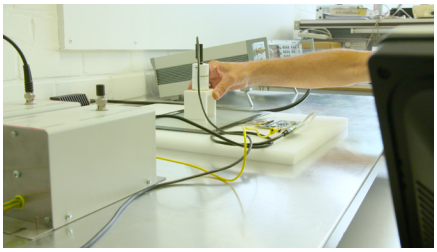
Prevention of radiation

LC-Display

Many medical applications use an LCD that is controlled by internal electronics. To limit their emission, a shielding film can be placed in front of the screen. This is done by using a mesh foil with an electrically conductive grid that has a shielding function for interference from the LCD. While many of these mesh films darken the image, SCHURTER uses a film with a very high transparency so that the image itself is not affected.

Testing

Prototypes are tested for EMC properties in a specially designed radiation-free room. The product is placed in the test room, connected to the cabling and switched on. All signals around the frequency in question are registered by an antenna in the test room and transmitted via coaxial cable to a spectrum analyser outside the room. An algorithm determines an average value for these signals, which must lie between 2 set values.



EMC testing

Cost reduction in the production process

Because paying attention to EMC requirements is already part of the first design of the product, the choice of materials and their constructions are adjusted accordingly. Therefore, it is possible to develop a high quality product, that fits perfectly into the production process, without too much additional costs. And, most important, with the right EMC properties.

SCHURTER is a company that works continuously to optimise production processes. This way, the customer is assured of a safe, EMC-compatible product at a competitive cost.

About SCHURTER

The SCHURTER Group is a globally successful Swiss technology company. With our components ensuring the clean and safe supply of power, input systems for ease of use and sophisticated overall solutions, we impress our customers with agility and excellent product and service quality.

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