SAW filters for medical applications
SAW filters for medical applications:

- Optimised SPUDT (Single Phase Unidirectional Transducers) combine transversal and resonant filter design principles to take advantage of either of them. This design principle can support single-ended to balanced operations.

An extremely high reliability is the most important prerequisite for this application. VI-Telefilter has been certified according to the TS16949 standard.

Requirements for SAW filters for medical applications:

- Low insertion loss
- Sharp filter characteristics and good close-in rejection for small-sized packages
- High reliability
- Single-ended to balanced operations

Design capabilities:

Optimising the transduction and reflection of interdigital transducers improves filter performances while keeping the chip size (filter size) the same. Caused by internal reflections, the signal length in time domain is increased. A better filter performance may be achieved when having a longer signal in the time domain. One of the optimisation parameters may be the insertion loss.
Most of our SAW filters for medical applications are based on the optimised SPUDT design principle. This provides the best compromise between close-in rejection and low insertion loss for small sized packages. The advantage is given by the design principle and the substrate materials applicable for it. If the insertion loss is more important than close-in rejection, Telefilter uses design techniques based on resonant structures. Considering the bandwidth for medical applications, Telefilter uses substrate materials with higher temperature coefficients. This reduces the close-in rejection, which may be guaranteed in the operating temperature range.

Medical applications and VI-Telefilter

All VI-Telefilter plants are TS16949 and ISO14000 certified. VI-Telefilter is using its experience in the development and production of GSM base station filters, where it leads the market to support the upcoming need for medical applications.

All design principles that are needed to address this market with its special requirements are available. Several cuts of LiTaO3 and quartz are used to find the best solution for the customer. The market of filters for medical applications is one of customized products. VI-Telefilter is well known for its tight contacts to customers in the design phase to develop optimum solutions.
Vectron International – Telefilter – Germany

Employees: 170

Products:
SAW Filters, SAW Resonators and
Monolithic Crystal Filters (MCF)

Experienced SAW design team,
supported by a worldwide sales
organization

75% of product portfolio less
than 2 years old

Technological expertise on
materials, front-end and back-end

Fully automated assembly process

Vectron International - Telefilter
Potsdamer Straße 18
D–14513 Teltow
Germany
Phone: +49 (0) 3328 4784 17
Fax: +49 (0) 3328 4784 30
telefilter@vectron.com
www.vectron.com

Vectron Frequency Devices – Switzerland

High-end Nikon stepper
for high resolution (0.35µm)
and high throughput

Products:
High-performance RF-filters,
High volume low cost RF-filters
up to 3 GHz

According to the Dover corporate
policy each individual group member
company operates independently
on the very sound financial back-
ground of a strong international
group. VI is one of the largest suppliers
of Frequency Control Products with
worldwide annual sales of over $200
Million and a growth rate that is
clearly above average.

As a group member within the VI
group VI-Telefilter is located in
Teltow/Berlin and operates on a
global level.