Fraunhofer Institut
Zuverlässigkeit und
Mikrointegration

Press Release

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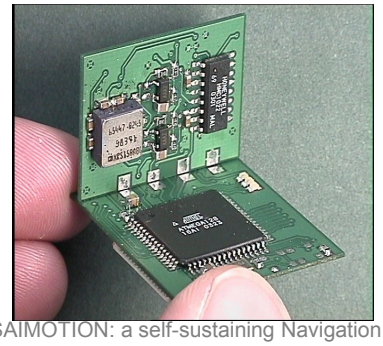
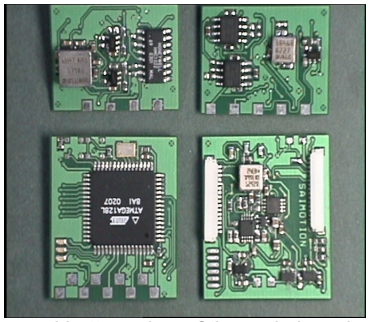
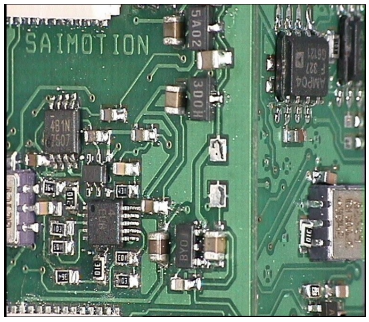


SAIMOTION: a self-sustaining Navigation



Top and bottom view of the main board and the side board



SAIMOTION

The most types of navigations nowadays depend on systems like GPS, which do not work in closed rooms. SAIMOTION is an attempt to find a solution which works self-sustaining. The central idea is to calculate distances and rotation angles with the help of measured sensor data. The main task such as sampling sensor data, filtering and calculating is performed by a high speed microcontroller. The processed data is sent subsequently to a base station by a extern connected bluetooth module either or by a internal 868Mhz transceiver.
The sensor fusion of SAIMOTION is a combination of acceleration sensors, magneticfield sensors and a gyroscope. In this connection the arangement of the acceleration sensors is able to acquire accelerated movements in all three axes. A magnetic field compass controls the changing of directions and delivers the needed data to calculate the angle, which is currently being changed. Invalid magnetic field sensor data due to electromagnetic polution is detected by SAIMOTION with the help of the an alternativ measurement of rotation. This refund measurement is the task of the gyroscope.
Another field of application for SAIMOTION is to controll distant objects. The abillity of measuring and calculating the location relative to earth ground allows to project the location onto another distant unit. An example for this application is to use SAIMOTION as a control unit for an vehicle. Also it is supposeable to control a distant electronic surgeon-unit with SAIMOTION.

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