

Radiocontrol – measuring the audience ratings

The institute of electronic (IfE) successfully realized for the electronic company Liechti a wrist-watch for measuring the audience ratings of radio stations.



Motivation

The company Liechti AG is specialized in TV audience-measuring technology. Related to this they wanted to develop a similar product to measure the audience ratings of radio stations. Since people are listening to the radio in different locations, the measuring device had to be very mobile. The only thing a test participant is willing to carry with him all the time is a wristwatch, which defined the maximum size of the device.

Description

The development of the Radiocontrol system was an interdisciplinary task including mechanical, hardware and software engineering, which consisted of downsizing a given first prototype with the size of an A4 sheet into a system fitting the case of a wristwatch.

In a first step the given prototype design was shrunk into a small box to be carried in the pocket of a shirt. With these boxes, very successful field tests were carried out. Thanks to these tests, technical important improvements could be implemented in the final design.

To reduce the size of the electronics and fit into the wristwatch case, Multi Chip Module (MCM) technology was chosen and six integrated circuits and about 40 passive components were included. Because of the high connection density, the routing of the connection lines was done manually. Due to close cooperation with mechanical engineering people, the MCM was designed on a flexible printed circuit board which was folded in the middle. These resulting four component layers were assembled with most of the electronic components in the two layers between, while battery and display were mounted on the outer two layers.

Good inter-communication between the design and manufacturing partners from the first stage of the project were the key to find the best engineering solutions and which lead to the highest possible production yield and to a successful product.

Results

The Radiocontrol monitor device was successfully shrunk into the case of a wristwatch. The product was introduced to the public in the year 2000. For the first time ever it was possible to measure the audience ratings of radio stations automatically without just interviewing test participants. The accuracy of the audience ratings increased dramatically, while the same time the costs of collecting the data reduced.

The Radiocontrol system was awarded with the „Technologiestandort Schweiz“ in 1999 and with the „Prix Innovateur“ in 2000 for the ideal cooperation of various industrial companies and universities.

Project

Radiocontrol

Project Partners

Liechti AG, CH-Kriegstetten
www.liechtiag.ch

Project Duration

60 months

Project Budget

CHF 350'000

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