

Energy Consulting for Green ICT Solutions

Methodical Design for Energy-efficient Electronics

Fast Facts

1. Higher revenue and the reduction of the CO2 footprint thanks to the efficient use of energy
2. Many years of experience in the design of industrial IoT systems enables the targeted utilization of savings potentials
3. A wide range of collaboration options from consulting to implementation

Energy efficiency and ecological hardware design play a key role in the development of modern electronic systems. For years, Fraunhofer IZM has been a leader in the development of embedded systems and autonomous sensor nodes for applications in energy technology, industry, and infrastructure monitoring. Energy efficiency is a key requirement in this context.

The R3S department at Fraunhofer IZM is a reliable partner for optimizing the energy management of electronic systems and minimizing energy demand. From system characterization and sustainable and energy-efficient hardware design to the development of energy-optimized firmware, clients benefit from many years of experience!

The IZM team models and parameterizes the entire energy conversion chain from the source, through suitable processing and intermediate storage, to variable loads.

Range of services

Identification of potential savings

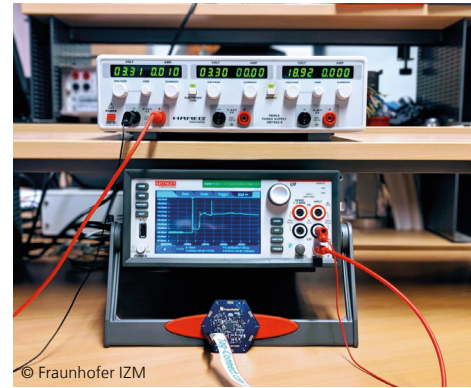
- Identification of relevant function groups
- Analytical and metrological recording of power consumption
- Development of an implementation concept

Energy-efficient hardware design

- Requirements analysis and system specification
- Selection of suitable technologies, topologies, and circuit concepts
- Selection of low-power components
- Circuit design, realization, and metrological verification

Energy-optimized firmware design

- Operating and power management concept
- Analysis of drivers, controllers, peripherals, and sequence control, comparison of power consumption, and requirements profile
- Optimization in areas such as the utilization level, cascaded idle modes, clock frequency, data management, processing depth, access to external components.



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Measurement and analysis of a sensor system's performance profile

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