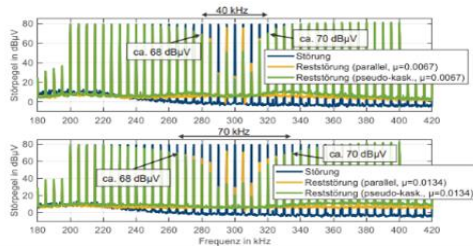


Active interference-suppressed power electronics

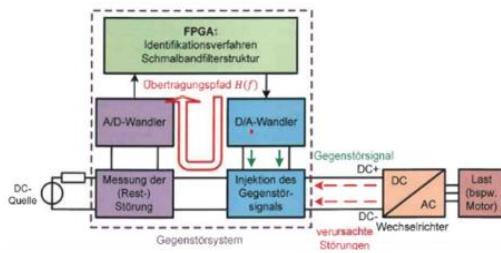
Broadband interference suppression with active narrowband filters

Invention

High-frequency circuits can cause electromagnetic emissions that impair other electronic systems. In power electronics, it is therefore often necessary to suppress EMC interference by such means as active narrowband filters. An invention from the Technical University of Dortmund suppresses interference in power electronics with an active counter-interference concept.



Comparison of interference and residual interference levels for three parallel and pseudo-cascaded adaptive notch filters with center frequencies of 290 kHz, 300 kHz, and 310 kHz with two different increments in μ



Schematic representation of the vector circuit setup.

reduce interference from these systems are thus gaining in importance. The invention essentially allows an FPGA to be implemented. It requires no large, passive components, so it is relatively low-cost and lightweight.

Current Status

A prototype has been set up and measured in the laboratory, and function tests have confirmed that the invention is advantageous. Registration with the German Patent and Trade Mark Office and other subsequent international applications are possible in the priority year. We are offering interested companies the opportunity to license and refine the technology in collaboration with the inventors and the Technical University of Dortmund.

Relevant Publications

„Vergleich zwischen parallelen und pseudo-kaskadierten adaptiven Kerbfilterarchitekturen zur breitbandigen aktiven Unterdrückung elektromagnetischer Störungen“; M.Sc. Tobias Dörlemann, B.Sc. Jens Aigner, Dr.-Ing. Andreas Bendicks, Prof. Dr.-Ing. Stephan Frei; Arbeitsgebiet Bordsysteme

https://bs.etit.tu-dortmund.de/storages/bs-etit/r/Dokumente/Veroeffentlichungen/2022/EMV_Koeln_2022_Doerlemann.pdf

Eine Erfindung der TU Dortmund University.

PROvendis GmbH offers IP services for universities, research facilities and technology-oriented companies. PROvendis recommends: www.inventionstore.de – free service to access the latest top technologies.

Competitive Advantages

- Adaptive counter-interference signals
- Very broadband solution for a wide frequency range
- Lightweight

Technology Readiness Level

123456789

Experimental proof of concept

Industries

- Electrical engineering
- Communication technology

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