Pascal Stadler

Analog ASIC | Package | PCB Design Engineer – Programmer

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Skills

- Cadence
- Sonnet
- EMX
- CST: Microwave + MPhysics Studio
- Altium
- KiCad
- Pspice
- LTSpice
- FreeCad
- SKILL/LISP
- MATLAB
- Python
- C
- C++

WORK EXPERIENCE

Scientific Researcher /PhD. Candidate

Planning, coordination, and execution of projects for the development of ASICs, packages, and PCBs for transmitter and receiver systems in automotive, mobile, and satellite communication sectors.

Optimization and evaluation of circuits through programming and high-frequency simulations

Creation, management, and grading of lab courses and examinations, as well as supervision of theses.

Since 01/21

Institute of Integrated Systems, Ruhr-University Bochum

Graduate Research Assistant

Design and simulation of high-frequency passive elements (couplers, inductors, power dividers, etc.) to minimize losses in D-band (110-170 GHz) systems

11/19 - 01/21

Institute of Integrated Systems, Ruhr-University Bochum

Research Assistant

Execution and evaluation of optical experiments to research the influence of temperature on VCSEL lasers

Implementation of software for VR headsets as an alternative to laser safety goggles in Android

03/19 - 09/19

Institute of Photonic and Terahertz technology, Ruhr-University Bochum

PROJECTS

1. VE-REWAL (IFX/IZM)

   Integration of chiplets in system-in-packages (SiPs) with electromagnetic and thermomechanical simulations

   Creatiion of supporting software (DRC, PCells)

   Development, measurement, and evaluation of a short-range automotive radar frontend (PCB, PLL, antennas, filters)

2. Automotive 140 GHz High Resolution Radar (TSMC)

   Design, measurement, and evaluation of key components in RFMOS D-band radar systems

3. Communication radar

   Creation of a multi-layer, low-power automotive communication PCB

   Bonding of IQ-SiGe chips, streamlined PCB assembly, and PLL design

4. Valestra (IFX) - Ongoing

   Detection of road users and environmental targets for BOGESTRA trams

   Design of spatially separated, incoherent frontend systems (PCB, antennas) and chips

EDUCATION

PhD in Electrical Engineering and Information Technology

Early-admission doctoral program via the RUB TopIng Program

Final Grade: Pending

01/21 - ?/26

Ruhr University Bochum

M.Sc. in Electrical Engineering and Information Technology

Final Grade: 1,0 (97/100%)

04/19 - 02/23

Ruhr University Bochum

B.Sc in Electrical Engineering and Information Technology

Final Grade: 1,7 (88/100%)

10/16 - 09/19

Ruhr University Bochum

High School Diploma (Abitur)

Final Grade: 1.5

08/2008 - 05/2016

Heinrich Heine Gymnasium

SIDE PROJECTS

Dactyl Manuform Keyboard

Designed, 3D-printed, and programmed a custom ergonomic mechanical keyboard using QMK firmware

Magnetic Smartphone holder

Developed a custom 3D-printed mount for magnetic charging (non-MagSafe) featuring swappable, personalized side panels with integrated LEDs and a digital clock

Homelab Infrastructure

Maintenance and operation of a private server utilizing Docker containers and Linux configuration for smart-home automation, automated backups, and self-hosted software solutions

E-Paper Dashboard

Programmed an E-Paper display with a Homelab backend to visualize CalDAV data (calendar/tasks) and weather forecasts

Miscellaneous

Various FreeCAD/KiCAD projects and prototyping with game engines, including Unity, Godot, and bare C++ development

LANGUAGES

German *C2** — *Native language*

English *C1** — *Certified by RUB*

Japanese *B1** — *Examined through JKI Cologne*

*With CEFR assessment for language proficiency.

MATLAB
C
C++
SKILL/LISP
Python
Java
HTML/CSS

CERTIFICATIONS

- Junior studies in Physics at the University of Duisburg-Essen
- Divers License (Class B)
- Life guard certification (DLRG Silver)

AWARDS

- Award Winner, ESCRYPT Young Talent Award (2020)
- Award Winner, Intel Award (2020)
- Finalist, RWW Best Student Paper Award (2025)

PUBLICATIONS

Peer-Reviewed Journals

- **Stadler, Pascal** et al. **2025**. "Leveraging Harmonic Phase States in E-Band Multipliers to Improve Spectral Purity". In: *IEEE Transactions on Microwave Theory and Techniques*, pp. 1–14. DOI: 10.1109/TMTT.2025.3592758.
- **Stadler, Pascal** et al. **2025**. "Leveraging Modularity of Chiplets to Form a 4×4 Automotive FMCW-Radar in an eWLB-Package". In: *IEEE Journal of Microwaves* 5.5, pp. 1071–1081. DOI: 10.1109/JMW.2025.3595647.
- Romstadt, Justin, [...], **Stadler, Pascal**, et al. **2024**. "Proving the Feasibility of D-Band Single SiGe MMIC Vector Network Analyzer Extension Modules With Large System Dynamic Range". In: *IEEE Journal of Microwaves* 4.4, pp. 706–720. DOI: 10.1109/JMW.2024.3444040.
- Romstadt, Justin, [...], **Stadler, Pascal**, et al. **2023**. "A 117.5–155-GHz SiGe ×12 Frequency Multiplier Chain With Push-Push Doublers and a Gilbert Cell-Based Tripler". In: *IEEE Journal of Solid-State Circuits* 58.9, pp. 2430–2440. DOI: 10.1109/JSSC.2023.3284600.
- **Stadler, Pascal** et al. **2022**. "An Overview of State-of-the-Art D-Band Radar System Components". In: *Chips* 1.3, pp. 121–149. ISSN: 2674-0729. DOI: 10.3390/chips1030009. URL: https://www.mdpi.com/2674-0729/1/3/9.
- Lindemann, M. et al. **Mar. 2020**. "Bias current and temperature dependence of polarization dynamics in spin-lasers with electrically tunable birefringence". In: *AIP Advances* 10.3, p. 035211. ISSN: 2158-3226. DOI: 10.1063/1.5139199. eprint: https://pubs.aip.org/aip/adv/article-pdf/doi/10.1063/1.5139199/12823098/035211_1_online.pdf. URL: https://doi.org/10.1063/1.5139199.

Peer-Reviewed Conference Proceedings

- **Stadler, Pascal** et al. **2025**. "An E-Band Quadrupler Utilizing a 45°Polyphase Filter for Improved Harmonic Rejection". *2025 IEEE Radio and Wireless Symposium (RWS)*, pp. 89–92. DOI: 10.1109/RWS62086.2025.10905006.
- **Stadler, Pascal** et al. **2025**. "Multi-Level Characterization and Calibration of an eWLB Automotive Amplifier". *37th Asia-Pacific Microwave Conference (APMC) - Publication tbd.*
- **Stadler, Pascal** et al. **2025**. "Utilizing RF-Chiplets For A Reconfigurable Automotive Radar System-In-Package". *2025 Mikrosystemtechnik Kongress - Publication tbd.*
- Yildirim, Muhammed Ali, [...], **Stadler, Pascal**, et al. **2025**. "A 40–58 GHz Differential Three-Push Frequency Tripler in a 90-nm SiGe BiCMOS Technology". *2025 IEEE 24th Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems (SiRF)*, pp. 72–75. DOI: 10.1109/SiRF63957.2025.11076878.
- **Stadler, Pascal** et al. **2024**. "An E-Band, High-Gain Current Clamping Power Amplifier for eWLB-Integration". *2024 19th European Microwave Integrated Circuits Conference (EuMIC)*, pp. 194–197. DOI: 10.23919/EuMIC61603.2024.10732572.
- **Stadler, Pascal** et al. **2024**. "A D-Band 28nm CMOS-Bulk Power Amplifier with 12.8dBm Output Power and 31.3GHz 3dB Bandwidth". *2024 IEEE 24th Topical Meeting on Silicon Monolithic Integrated Circuits in RF Systems (SiRF)*, pp. 9–12. DOI: 10.1109/SiRF59913.2024.10438624.
- **Stadler, Pascal** et al. **2024**. "In-Package Characterization of Dielectrics Using Ring Resonators and Adaptive 3D EM-Simulations Around 77 GHz". *2024 15th German Microwave Conference (GeMiC)*, pp. 272–275. DOI: 10.23919/GeMiC59120.2024.10485307.
- Jung, Natalie, [...], **Stadler, Pascal**, et al. **2020**. "Investigation of the polarization state in spin-VCSELs with thermally tuned birefringence". *Semiconductor Lasers and Laser Dynamics IX*. vol. 11356. SPIE, pp. 72–77.