

CAN I COMBINE SCIENCE AND BUSINESS IN A SINGLE JOB?

YES.

We'll show you how at Fraunhofer IIS.

For the »**RF and SatCom Systems**« department in **Erlangen**, the Fraunhofer Institute for Integrated Circuits IIS is currently seeking a

Master Thesis Student

for the topic »**Design of an Antenna Array for 5G Communication**«

One of the key innovation factors of fifth generation communication ("5G") is the extension to millimeter wave (mm-waves) frequency region in order to meet the demand for exponentially increasing data rates. However, steerable high gain antennas are required to overcome the increased path loss at mm-waves and to ensure exact beam alignment between communication partners.

In this work a steerable antenna array for base station application has to be designed in order to enable possible illumination of one 90°-sector with an overlapping beam scheme. For the array elements excitation with variable phases and amplitudes dedicated chips are provided that need to be wired/ connected properly.

The scope of this work includes:

- Literature research in phased array design and mm-wave 5G communication
- Antenna element design for 26.5 -29.5 GHz
- Antenna array design and layout (including beam-steering scheme)
- Implementation and measurement of antenna array in anechoic chamber

The thesis can be written in English or German.

Your profile:

- You have a thorough understanding of Electrodynamics, RF and Antennas
- You have good data processing skills
- You are willing to work self-dependent
- You are experienced with industry-standard EMC-Tools (optional)

What you can expect from us

- An **open and cooperative** working environment
- **State-of-the-art laboratory** and **technology equipment**
- Versatile tasks with a high level of **practical relevance**
- **Flexibility** concerning your working hours

The thesis will be assigned and carried out in accordance with the rules of your university. For this reason, please discuss the thesis with a professor who can advise you over the course of the project.

Interested?

Please apply for this position using the following link: <https://recruiting.fraunhofer.de/Vacancies/58484/Description/2>

Applications are possible **in German and English**. Please include a cover letter, your CV and your latest transcripts of records (as PDF) and quote ID number **58484-KS**. Address your application to Nina Wörlein.

Please let us know how you learned about this job opportunity.

Additional information is available on our website: www.iis.fraunhofer.de/en