

CAN I COMBINE SCIENCE AND BUSINESS IN A SINGLE JOB?

YES.

We'll show you how at Fraunhofer IIS.

For the »**Self-Powered Radio Systems**« department in **Nürnberg**, the Fraunhofer Institute for Integrated Circuits IIS is currently seeking a

Student Assistant / Intern

Interference Signal Generation (IZT S1010 Multi-Channel Signal Generator)

The department of »**Self-Powered Radio Systems**« is focused on efficient systems and protocols for wireless data transmission and energy harvesting. One priority is the area of Internet of Things (IoT) and Industrial Internet of Things (IIoT), which led to the development and ongoing improvements of **Mioty**, a new **low-power wide-area network** (LPWAN) technology. Mioty, an ETSI standardised system, is analysed, among other features, with respect to energy efficiency, and compared to other LPWAN technologies, e.g. NB-IoT (3GPP).

Interference resistance is an important feature of communication systems. Here we want to focus on the model of a typical ISM channel, consisting of narrowband, broadband signals and specific LPWAN signals, e.g. Lora, Mioty, and Sigfox. A multi-channel signal generator should be used to minimise the number of devices. Python program (with libraries like numpy) should be used for the composition of the signals (time, frequency, wave form), which will be transferred to the signal generator. An already existing composition framework (LIKE, C++) might be used.

Your tasks

- You get to know Git, Doxygen documentation, Test with py.test
- You write Python class for IZT multi-channel signal generator (IZT S1010)
- You connect to generator
- You configure parameters, e.g. center frequency, output power
- You transmit signal streams (coming from remote computer)
- You create interference signal streams to be transmitted with signal generator

Your profile

- You are studying electrical/electronic engineering
- You are familiar with Python
- You are experienced with an object oriented programming language
- You are familiar with digital signal processing
- You are experienced with communications (nice to have)

What you can expect from us

- An **open and cooperative** working environment
- Collaboration in interesting and **innovative projects**
- Many opportunities to gain practical experience and attend seminars
- **Flexibility** concerning your working hours

If you have any questions about this opening, please contact **wolfram.strauss@iis.fraunhofer.de**

Interested?

Please apply for this position using the following link: <https://recruiting.fraunhofer.de/Vacancies/61915/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 **61915-LV**. 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