



National Astronomical Research Institute of Thailand (Public Organization)

Announcement

Recruitment of a Contract Employee

Project Objective: Developing Mixed-Signal Circuits with Superconducting Joints

Our primary objective is to design and implement a system capable of receiving high-frequency signals in the millimeter wavelength range. This entails extensive research into the creation of superconducting joints and the establishment of a standardized test system for measuring millimeter wavelength signals, utilizing Field-Programmable Gate Array (FPGA) technology for data processing.

Subsequently, we aim to convert digital signal processing from the superconducting junction circuit, facilitating the creation of a robust signal reception system. Concurrently, we seek to advance our expertise in high-speed data processing technology and refine processing algorithms for other signal reception systems.

Within this research framework, our plan includes FPGA circuit design and the development of a sequence control program tailored for digital signal analysis. Additionally, we will cultivate personnel proficient in high-speed digital circuit design.

Given these objectives, it is imperative to enlist engineers adept in designing high-speed digital processing circuits. Ideal candidates should possess expertise in electronics, high-speed digital circuit design, system setup for measuring high-speed digital signals, signal analysis, and data storage. They will assume responsibility for executing these tasks effectively.

1. Qualifications and responsibilities are as an annex attached

2. Date and time of application and application process

2.1 Applicant can apply **within 15 March 2024(Fri), 16:59 UT** by one of the following channels via;

Website; <https://jobs.narit.or.th/>

Email; personnel@narit.or.th, Koichiro@narit.or.th,

Koichiro.sugiyama@gmail.com

Post; addressed to
Human Resource Management Department (please refer to Job Application)
National Astronomical Research Institute of Thailand (Public Organization)
260 Moo 4, Donkaew, Maerim, Chiangmai, 50180 – Thailand

- 2.2 Interview (online) : If necessary, in 18-22 March 2024
2.3 Due of selection announcement : 26 March 2024 (Tue)
2.4 Offer starting date : Immediately, negotiable

3. Required document

- 3.1 Cover letter with the foreseen starting date and the contact
3.2 Curriculum vitae; including skills/experiences as well
3.3 Certificate of Bachelor's or Master's degree
3.4 Copy of ID card or passport

4. Employment period

The contract is valid for one fiscal year and is extendible on a yearly basis.

Announce on : February 21, 2024



Saran Poshyachinda, Ph.D.
NARIT Executive Director

Annex of National Astronomical Research Institute
of Thailand (Public Organization) Announcement
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Position title: Embedded Systems Design Engineer 1 Position

Affiliation: Division for Radio Observatories Operations and Engineering

Employment period: from start date until 30 September 2024, and will be extendible.

Salary: 22,000 – 35,000 Bath/month (potentially to be raised at the beginning of each fiscal year)

Work location: NARIT headquarter, Chiangmai, Thailand

The duties of the proposed position are listed below:

1. Develop analog-to-digital conversion and signal processing circuits on FPGA chips, encompassing programming for FPGA operation control.
2. Design ASIC/FPGA solutions in alignment with architectural specifications.
3. Employ simulations and analytical tools adeptly to troubleshoot and resolve challenges.
4. Procure essential equipment and tools for producing printed circuit boards utilized in FPGA board manufacturing, encompassing SMD, SMT, QFN, and RF-component equipment.
5. Solder SMD, SMT, QFN, and RF-component electronic devices onto printed circuit boards, conduct meticulous measurements and testing, and compile comprehensive reports on outcomes.
6. Fabricate signal processing system prototypes by integrating components and systems, undertake system installations, and ensure ongoing maintenance of signal receiver systems.
7. Generate detailed reports, documentation, and presentations pertinent to the assigned research projects within the designated area of expertise.
8. Fulfill additional responsibilities such as procuring materials and equipment, liaising with external stakeholders from diverse departments, and undertaking other assigned tasks as needed.

Skills/Qualifications

The candidates are to have the following qualifications in possession:

1. Possess a bachelor's degree or higher in Electrical Communication Engineering, Telecommunications Engineering, Software Engineering, Control Engineering, Instrumentation Engineering, or a related field.
2. Age should not exceed 40 years, and both male and female candidates are welcome.
3. Demonstrate proficiency in radio frequency communication systems and digital signal processing.
4. Possess foundational knowledge in designing analog-to-digital conversion circuits, with the ability to create circuit designs and components using FPGA chips. *Candidates with experience in electronic circuit design using tools like Altium, and proficiency in devices such as SMD, SMT, QFN, RF-components for at least 1 year, will receive preferential consideration.
5. Perform basic program simulations using analog or digital interfaces for analysis.
6. Develop subprograms to effectively operate boards utilizing FPGA chips.
7. Utilize software tools such as Vivado Design Suite, Matlab, or other related programs to write commands on FPGA boards.
8. Candidates with a minimum of 1 years' experience using FPGA Xilinx boards for radio frequency signal analysis will be given priority consideration.
9. Proficiently operate measuring tools including Multimeter, Oscilloscope, signal generator, spectrum analyzer, among others.
10. Demonstrate proficiency in listening, speaking, reading, and writing English.
11. Willingness and ability to work in other provinces or abroad.
12. Capable of collaborative teamwork with proactive engagement in project development, including the ability to collaborate effectively with international organizations.