

JONATHAN RICO

EMBEDDED ELECTRONICS ENGINEER

☎ +33 7 6190 1273

✉ jonathan@rico.live

🌐 <https://jonathan.rico.live>

SKILLS



Embedded system design

- Architecture
- Component selection
- Low power design



Embedded programming

- C/ASM, FreeRTOS
- ARM Cortex-M0/3/4
- AVR, MSP430, Nios II



PCB design & prototyping

- Schematic and Layout
- SMD stencil soldering
- Fine-pitch SMD rework
- Enclosure prototyping



Digital systems

- VHDL programming
- SoC peripheral design

TOOLS



Software

- MacOS/Windows/Linux
- CI and VCS : Git, Gerrit, Jenkins
- Deployment : Docker
- Embedded toolchains and IDEs : Eclipse, Keil, Quartus, etc



Lab equipment

- Multimeter / Lab PSUs
- Logic Analyzer
- Oscilloscope
- Waveform generator
- Spectrum analyzer

EXPERIENCE

R&D Engineer at Maple High Tech – Toulouse – France

April 2017 – Present

Tasks:

- Power supply redesign for a geolocation beacon
- Low-power redesign of a geolocation beacon
- Baseband software port from STM32 to nRF52 SoC.

Achievements:

- Low-power component selection (power tree, and uC), schematic, test and integration into a new hardware revision
- Development of a flexible driver abstraction (in C) for the baseband, code refactor, and implementation for STM32 (original) and nRF52 (future) platforms.
- Low power debugging, both hardware (rework to find power-hungry / problematic circuit sections) and software (edge cases, etc).
- Development of a server component (python + siddhi)
- Containerization (Docker) of both the compiled server suite and the whole python/angular development environment

Consultant at ARCYS – Toulouse – France

March 2018 – Sept 2018

Tasks:

- Design and test/characterization of a Binary I/O signal isolation and conditioning rackmount card (using analog tech only)

Achievements:

- Selection of the right components and values, schematic capture.
- Simulation of the individual analog function blocks in LTSpice, Test & validation with a real device (worst cases, shorts/spikes on inputs, thermal stress etc) and circuit rework to meet design specifications.
- Documentation (Design report, Test plan & report, etc..)

EDUCATION

2017-2015 : Master – Electronics for Embedded Systems and Telecoms

Major in digital systems

Université Paul Sabatier – Toulouse III

2014-2013 : BTS – Electronic Systems

Lycée Déodat de Séverac – Toulouse

PROJECTS

- Design, manufacture and programming of a Binary LED wristwatch with the following features: Gesture controls, Multiplexed scrolling text display, 2.4G RF transceiver. MSP430-based.
- Design, manufacture and programming of a Guitar FM transmitter: Matchbox-sized unit plugs directly into an electric guitar, amplifies, compresses and transmits the Audio over standard FM frequencies. AVR-based.