

# IGNASI SOLER

ARINSAL TECHNOLOGIES

## Personal details

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## Summary

As hardware consultant I develop complete electronic projects for different clients, from specifications to ready-for-production prototypes. Through Arinsal Technologies, I offer the schematic design, PCB layout, support for prototype manufacturing, hardware verification and testing, software and firmware development, and documentation.

An experience of more than 20 years in different areas of hardware design and firmware/software development, allows me to deliver high quality projects.

## Professional skills

Experience in different areas of electronics, like:

- Analog electronics
- Digital electronics
- Power electronics
- Mechatronics
- High speed digital design
- uController and uProcessor based systems
- CPLDs and FPGAs based systems
- Design for EMC
- Product development
- Project management

## Career history

**ARINSAL TECHNOLOGIES (Founder and owner)**, Arinsal, Andorra

August 2018 – present

Electronic consultant

- Hardware design (schematics and layout) of ARM Cortex-M3/M4 based boards with standard peripherals and interfaces (Ethernet, RS232, RS485, I2C, SPI, ...).
- FreeRTOS porting and API development.

**WHITE TIP TECHNOLOGIES**, Andorra la Vella, Andorra

February 2016 – August 2018

Hardware engineer

- Hardware design (schematics and layout) of video compression boards based on ARM Cortex-A7 processor and FPGAs with standard peripherals and interfaces (DDR3, eMMC, Gbit Ethernet, PCIe, QSPI, SPI, I2C, USB, RS232, RS485, ...).
- Linux OS porting (U-Boot bootloader, Linux OS, root filesystems, and Yocto Project).

- Linux Device Drivers customization and development.

**HEWLETT-PACKARD**, Sant Cugat del Vallés (Barcelona), Spain

April 2014 – February 2016

Hardware engineer

- 3D printer electronic architect and integrator. Manage a team of electronic engineers and represents the electronic discipline at project and business level.
- Carriage pipeline specification and design for 3D printers. Specification, design, and start-up of the carriage electronics, a sub-system based on high speed digital electronic ASICs and sensors within a high temperature environment and rigid mechanical constrains.
- Electric architect for 3D printer accessories. Define the electronic architecture and dimension the needed resources.
- Support for mechatronic, legacy, and high temperature electronics as experienced engineer.

**HEWLETT-PACKARD**, Sant Cugat del Vallés (Barcelona), Spain

July 2013 – April 2014

EMC engineer

- Definition of grounding and shielding techniques for Large Format Printing products.
- Definition of EMC guidelines for electronic designs including high speed digital design, mixed analog-digital design, cabling, and power supplies.

**HEWLETT-PACKARD**, Sant Cugat del Vallés (Barcelona), Spain

May 2010 – July 2013

Hardware engineer

- Formatter board technical specification. Electronic board based on an Intel Arrandale processor (i5), supplied by a based ATX custom power supply unit, and with the standard x86 platform peripherals and interfaces (DDR3, PCIe, SATA HDD, Ethernet, USB, ...). Involved in design at supplier's office in Singapore.
- Mechatronic board design. Electronic board for DC motors management through analog custom ASICs, sensors, actuators, and communications.
- Strategy, definition and follow-up of cabling for large format printers. Signal integrity, EM compatibility, reliability, robustness and cost oriented design.
- Technical support on different prototype and production builds in production lines at China factories.
- Installation of two Large Format Printer prototypes at customer's office in Tampa (Florida, US) and Baltimore (Maryland, US).

**OPEN TRAFFIC SYSTEMS**, Barcelona, Spain

May 2005 – May 2010

Hardware engineer

- Hardware design of street parking pay and display machines. Design of different ARM uProcessor (SDRAM, Ethernet, ...) and TI MSP430 uController based boards.
- Firmware for TI MSP430 uControllers and CPLDs (VHDL) development.
- Hardware design and firmware development of a temperature and relative humidity portable measurement equipment based on TI MSP430 uController with support for GPS.

- Supply chain, production, and customer faced activities.

**COINVA**, Terrassa (Barcelona), Spain

May 2004 – May 2005

Hardware engineer

- Mathematical modeling and design of AC current transducers based on Rogowski coils.
- Hardware design of Rogowski coils measurement boards.
- AC current measure transformers design.

**ELECTROMEDICIONES KAINOS**, Cornellà de Llobregat (Barcelona), Spain

May 2001 – May 2004

Hardware engineer

- Hardware design of electrical parameters measurement equipment based on TI TMS320 DSP (active, reactive, and apparent power, cosPhi, Vrms, Irms, ...) for single-phase and three-phase environments. Firmware development for DSP.
- Hardware design of hand-held electrical parameters measurement equipment based on TI MSP430 uController. Firmware development for uController.
- Hardware design of analog electrical parameters measurement equipment.

**SOLING**, Barcelona, Spain

May 1996 – May 2001

Hardware technician

- Electronic equipment production and maintenance.

Recognitions,  
patents, and  
publications

HEWLETT-PACKARD

- **System with components operable in low power modes.**  
Patent number: 8766673
- **Position encoder systems.**  
Application number: 20140022556
- **HP Recognition:** September 16<sup>th</sup>, 2015  
Hard work. Huge effort during summer to enable BB1 build without stopping any activity.
- **HP Recognition:** April 22<sup>nd</sup>, 2015  
Making the difference. For all your contribution in the Tatoonie Carriage electronics to be up & running in BB0 and having already a design for BB1. Your multidisciplinary approach to this asset is helping the program to converge.
- **HP Recognition:** July 27<sup>th</sup>, 2013  
Making the difference. Engage and effort with new platform EMC testing. Recognized by other teams.
- **HP eAward:** June 14<sup>th</sup>, 2013  
LF Design Mercury Introduction Spring'13. Key contribution on overcoming several challenges and making an extraordinary effort to get a high-quality reliable product shipped in spring'13.
- **HP eAward:** September 2<sup>nd</sup>, 2012  
Leadership, team work and focus on quality demonstrated bringing up Mercury Platform.
- **HP eAward:** January 25<sup>th</sup>, 2011  
Proactivity and commitment to enable functionalities beyond plans and reliability level exceeding expectations in Mercury Platform.

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## Education

**Postgraduate Course in Reconfigurable Digital Systems.**  
Universitat Politècnica de Catalunya, Barcelona 2007.  
**BSc in Applied Physics and Electronics.**  
Universitat de Barcelona 1993 – 1998.  
**Degree in Electronics Engineering.** Pending last year subjects.  
La Salle, Universitat Ramon Llull, Barcelona 1999 – 2001.  
**Degree in Electrical Engineering.** Pending las year subjects.  
Escola Universitaria dels Salesians de Sarrià, Barcelona 2004 – 2006.

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## Training

**Advanced Hardware Design.** Fedevel Academy, Robert Feranec. On-line 2018.  
**Learn the Essentials of creating uBoot, Linux and Yocto.** Fedevel Academy, Robert Feranec. On-line 2017.  
**Hands-on Embedded Linux.** Intellimetrix, Doug Abbott. On-line 2017.  
**Linux Device Drivers.** Intellimetrix, Doug Abbott. On-line 2017.  
**C-Programming for DSPs.** University of California Irvine UCI. On-line 2016.  
**Linux Driver Primer.** University of California Irvine UCI. On-line 2016.  
**Signal Integrity and Board Design. Hyperlinx.** Hewlett-Packard 2015.  
**Fixtures for Electronic Test.** SA Sistel. Barcelona 2015.  
**Allegro AMS Simulator & Allegro AMS Simulator Advanced Analysis FlowCad.** Hewlett-Packard 2014.  
**Advanced High Speed Digital Design.** Robert J. Hanson. Mindshare, Inc. Hewlett-Packard 2013.  
**Key Issues of EMI/EMC: How to Build and Design a Reliant System.** Robert J. Hanson. Mindshare, Inc. Hewlett-Packard 2012.  
**Allegro Design Entry HDL.** Cadence. Hewlett-Packard 2001.  
**Building Embedded Solutions using Windows CE 5.0.** Adeneo. Lyon 2007.  
**Design of Embedded Systems with Linux. Basic and Advanced levels.** EUSS. Barcelona 2003.

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## Languages

**Spanish and Catalan** as mother tongue.  
**English:** professional working level.

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## Skills

**Programming Languages:** C/C++, Assembler, Java.  
**Web programming:** HTML, CSS, JavaScript.  
**Hardware programming:** VHDL.  
**Operating Systems:** Linux, Windows (old DOS).  
**Programs:** MATLAB, Cadence, Altium, OrCAD.  
**Utilities:** MSProject, MSOffice.

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## Others

Interests: study science and history.  
Music: classic and modern piano studies.  
Sports: running, diving, ski.

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