Theo Hatzis, MSc

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Summary

Engineer with 30y++ experience in hardware development with OrCAD, Protel (aka Altium), Mentor Schematic capture, on microprocessor based applications, interfaces and sensors for medical, scientific, wireless terminals and traffic surveying equipment (bicycles detection, weigh-in-motion, inductance loops and magnetometer arrays). In mid-career, developed the communications "outstations" equipment of the MIDAS subsystem deployed on the UK's M25 Controlled-Motorways pilot project automatic incidents detection and variable speed limit signalling systems.

Recent freelance projects include the schematic design on 3G/4G early access devices, Validation and Design Verification on 3G and LTE Modems, PMU, PA, RF Transceivers, and post-silicon automation and manual testing on PMU, PMIC, DCDC, Charge Pumps and Buck/Boost devices, with automation in Python, C#, Teststand and LabVIEW.

Project Interests:

- Validation/Verification
  - *Component verification, Validation - DCDC, MOSFET, Battery Switches, Radar, Automotive and other Sensors*
  - *Power Semiconductor Characterization, Verification, Validation and Temperature profiling*
  - *Bench automation with Python, C# and Teststand*
  - *Battery performance testing. Power Consumptions*
  - *RF and PSU related measurements*
  - *Competitive analysis and issues related work*
- Hardware Design and Development
  - *8/16/32-bit microprocessor based applications and products*
  - *Component technology selection, PCB floorpanning, Design reviews, PCB layout reviews*
  - *Interface design, Analog/digital data converters, Operational amplifier circuits. High speed circuits*
  - *Analogue design simulation with Spice*
  - *Battery power circuits, Switching, Power distribution and OR-ing circuits. Charging circuits*
  - *Transportation communications signalling infrastructure equipment, Communications controllers. Line interfaces.*
  - *Design to requirements, safety, environmental performance and Testing*

Experience Areas:

- Hardware development
  - *8/16/32 bit micros application boards, releated digital design, Analogue (ADC, DAC, S/H, OP-AMP)*
  - *Electronics Schematics design with OrCAD, Protel (or Altium), Mentor Graphics Expedition*
  - *Battery Chargers, Board power distribution*
  - *Microprocessor boards and specialised interfaces in Medical products, data communications and Scientific Instruments*
  - *RS485, V26, V29 and PCM Data Tributaries signalling circuits, Lightning protection, RS485 galvanic/opto islations*
  - *Industrial ruggidized computer tablets development, and approval for CE, EMI, SAR and Network performance*
  - *Design to requirements, Documentation, Test house liasion for CE, EMC and Acceptance*
  - *Medical and IT equipment approvals, saftey, UL, TUV, VDE, EMC, CE and Environmental performance*
- Sensors
  - *Radar Sensors, Magnetometers, Inductive loops, Gas sensors*

- Software and Tools
  - *Python (10y), C# (10y), Teststand, LabVIEW and MATLAB/SCILAB (2y)*
  - *Some lightweight software development and test e.g. with Docker, Jenkins, Cmake build tools and Pytest/Allure*
  - *Some C (microchip PIC), Arduino DUE with Visual Studio and with the Visual Micro addin.*
  - *VHDL design on mainly low-end logic circuits, such as PLD, EPLD and CPLD and small FPGA*
- Semiconductors
  - *PMIC Chipsets and DCDC validation*
  - *3G and LTE Modem platforms verification. RF and PA with PSU measurements*

Training

- Courses in RF Circuit and System Design, TestStand, LabVIEW, EMI, ESD, Spectrum Analyzer, Allegro/Cadence, TIBCO Spotfire, MSc (distinction), BSc(Hons) and HNC(BTEC)

Projects

Component Verification Engineer, Infineon Technologies AG, Oct 2021 – Present [Hays]
- Component verification on automotive devices

Test and Verification Engineer for Radar Applications, Infineon Technologies AG, Oct 2020 – Mar 2021 [Hays]
- Software development, 60GHz Radar Sensors SDK and GUI tests

Validation Expert, Texas Instruments GmbH, July 2018 – June 2020 [Hays]
- Device characterization and Bench validation of DCDC converters

Application Engineer, Dialog Semiconductor GmbH, October 2017 – April 2018 [Hays]
- Mixed-signal PMIC Chipset DCDC Buck evaluation and documentation

Validation Engineer, TI Deutschland GmbH, August 2014 – September 2017 [Hays]
- Device Characterization and Bench validation of DCDC Buck, Buck-boost and Charge pump devices

Senior Baseband Designer (Digital), Intel Mobile Communications GmbH, February 2011 – January 2014 [ERL]
- Intel XMM series XGOLD 2-4G modem reference designs verification

Senior Baseband Designer (Digital), Infineon Comneon GmbH, August 2010 – February 2011 [ERL]
- Infineon XMM series XGOLD 2-4G modem reference designs verification

Hardware Consultant, ST Ericsson AT (Ericsson GmbH), Jan 2006 – Dec 2009 [Harvey Nash]
- Design and implementation of board-level power and distribution on early access FPGA based boards for 3G+ and 4G protocol stack development

Baseband Engineer, Texas Instruments A/S, Oct 2004 – Dec 2005 [WAC]
- 3G Mobile platforms designs verification. Validation test documentation and templates